

# REFERENCES

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**Ballastless track systems of RHEDA type for Long-distance transport**

System	Project	Length [m]	Year
<b>RHEDA 2000®</b>	Tunnel Pforzheim (incl. mass-spring-system)	2,200	2017-18
	Sliding platform Hamburg port	250	2017
	Israel, Line A1	2,462	2016-17
	Hanau – Nantenbach (Germany)	2 x 6,000	2016-17
	Tithorea - Domokos Transition Sleeper (Greece)	732	2016
	Othrys / Kallidromos	33,000	2015-16
	Kaiser Wilhelm Tunnel (Germany)	4,000	2015-16
	Old Bebenroth Tunnel (Germany)	1,000	2015
	Acton Diveunder London (Great Britain)	2 x 370	2014-15
	RWE track scale (Germany)	5 x 45	2014-15
	Borders Railway Bowshank Tunnel (Great Britain)	2 x 226	2014
	Riyadh Metro (Saudi-Arabia)	8,750	2013-18
	Berlin-Munich, Ebensfeld-Erfurt – Leipzig / Halle (VDE 8.1 und 8.2) (Germany)	44,800 lin. M.	2012-14
	Mekka-Medina, named Haramain-line (Saudi-Arabia)	2 x 80,000	2012-18
	Seoul – Mokpo, between Osong – Mokpo, named Honam-Linie (Southkorea)	2 x 230,000 6,730 lin. M.	2012-14
	Old Schluechterner Tunnel / between Frankfurt – Göttingen (Germany)	3,600	2012-13
	Bebenroth Tunnel between Goettingen – Bebra (Germany)	1,074	2012
	Tunnel Turecký from Nove Mesto nad Vahom – Púchov (Slovakia)	2 x 2,280	2011-12
	Bush Tunnel Aachen (Germany)	2 x 700	2011
	ESAP Metro Athens (Greece)	33,000	2009-11
Leipzig City Tunnel (Germany)	2 x 4,000	2009-10	
Southampton Tunnel (Great Britain)	2 x 550	2009-10	
Railway Connection Eje Atlántico, different tunnel projects (Spain): Meirama Bregua Cerceda Meirama	2 x 1,800 2 x 3,000	2009 2009	

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<b>RHEDA 2000® (continuation)</b>	Several tunnel projects on the High Speed Line Madrid – Valencia (Spain):		
	Hoyo de Roda	2 x 2,000	2009
	Umbria de los molinos	2 x 1,500	2009
	Villalgordo del Cabriel	2 x 3,300	2009
	Cabrera	2 x 7,200	2009
	Buñol	2 x 1,900	2009
	Torrent	2 x 3,000	2009
	Hampstead Heath Tunnel (Great Britain)	2 x 1,044	2008
	High Speed Line Seoul – Busan, 2 <sup>nd</sup> Section (Kyungbu-Line, 2 <sup>nd</sup> stage), Korea	2 x 110,500	2007-10
	High Speed Line Wuhan – Guangzhou, Passenger Dedicated Line (China)	2 x 980,000	2007-10
	Perpignan – Figueras (France / Spain)	2 x 4,500	2007-08
	Railway Connection Udampur – Katra (India)	10,000	2007-08
	Cologne, Mühlheim-Deutz (Germany)	2 x 300	2007
	Madrid – Barcelona, Tunnel Sant Joan Despí (Spain)	2 x 15,000	2007
	Madrid – Valladolid, Tunnel San Pedro (Spain)	2 x 12,000	2007
	Wuhan – Guangzhou, Pilot Track (China)	2 x 10,000	2007
	Eje Atlántico, different tunnel projects (Spain)	2 x 8,000	2006-07
	Guadarrama Tunnel (Spain)	2 x 30,000	2006-07
	Rudoltice - Trebovice (Czech Republic)	2 x 444	2005
	City railroad tunnel Unterfoehring/Munich (Germany)	2 x 1,400	2005
	Taipei - Kaohsiung (Taiwan)	88,000	2004-06
	North-South Link (Germany)	9,800	2004-05
Nuremberg - Ingolstadt (Germany)	2 x 36,000	2004-05	
Esslingerberg Tunnel (Germany)	2 x 13	2004	
Railway Bridge Ul. Wielicka Krakow – Tarnow-Line (Poland)	2 x 18	2003	
Side Connection with the High Speed line Nuremberg – Ingolstadt, Section Fischbach/Feucht (Germany)	2 x 2,100	2003	
Hibel Road Tunnel (Great Britain)	2 x 350	2003	
Prestbury Tunnel (Great Britain)	2 x 513	2003	

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System	Project	Length [m]	Year
<b>RHEDA 2000® (continuation)</b>	Amsterdam – Brussels (HSL Zuid / Netherlands)	2 x 80,000	2002-06
	Lehrter Bahnhof / New Berlin Main Station (Germany)	4 Turnouts	2002
	New Line between Las Palmas – Ourepesa (Spain)	2 x 430	2002
	New Connection between Erfurt-Halle / Leipzig – Section Grosskugel (Germany)	2 x 3,000	2001
	New Line between Erfurt – Halle / Leipzig – Section Schkeudiz (Germany)	2 x 500	2000
<b>RHEDA-BERLIN</b>	High Speed Line Cologne – Frankfurt Airport, Lot B (Germany)	2 x 95,000	1999-02
	Railway Connection Erfurt – Leipzig / Halle, Section Schkeuditz (Germany)	2 x 13,000	1999-00
	Upgraded Railway Connection Leipzig – Erfurt, Section Leislingen – Naumburg (Germany)	2 x 1,260	1997
	High Speed Line Hanover – Berlin, Section Zoo-Berlin Main Station (Germany)	4 x 8,000	1995-97
<b>RHEDA-Rathenow</b>	High Speed Connection Berlin – Hanover, Section Rathenow (Germany)	2 x 800	1998

**Asphalt-based ballastless track systems for Long-distance transport**

System	Project	Length [m]	Year
<b>ATD</b>	New Line between Las Palmas – Ourepesa (Spain)	2 x 435	2002
	High Speed Connection Berlin – Hanover, Section Haemerten (Germany)	2 x 5,500	1996-97
	Railway Connection Halle/S – Gunthershausen, Section Gotha Leinakanal (Germany)	2 x 1,490	1994
	Railway Connection Wuerzburg – Frankfurt/M., Section Nantenbach Curve (Germany)	2 x 7,240	1993
<b>GETRAC® A1</b>	Nuremberg port	366	2010
	Railway Project Wengi – Frutigen (Switzerland)	700	2004
	Lossetalbahn / Kassel (Germany)	650	2003
	New Line between Las Palmas – Ourepesa (Spain)	2 x 435	2002
	Railway Connection Hanover – Berlin, Section Berlin-Westkreuz-Ruhleben (Germany)	2 x 3,515	1994-95
<b>GETRAC® A3</b>	Railway Connection Hohenturm – Peißen (Germany)	4,698	2016-17
	Railway Connection Lehmsief, Line Stolberg – Herzogenrath (Germany)	280	2015-16
	New Schlüchterner Tunnel with trafficability (Germany)	4,080	2014-15
	Railway Project Old Mainz Tunnels (Germany)	2 x 900	2009
	Railway Project Schluechterner Tunnel / Railway Line Frankfurt – Goettingen (Germany)	7,571	2008-10
	Railway Project Brandleite Tunnel / Railway Line Erfurt – Wuerzburg (Germany)	2 x 3,600	2005
	Railway Project Esslingerberg-Tunnel / Treuchtlingen (Germany)	2 x 700	2004
	Railway Project Heiligenberg Tunnel (Germany)	2 x 1,300	2001-02
	Railway Project Kehretunnel (Germany)	2 x 300	2001

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System	Project	Length [m]	Year
<b>RHEDA CITY (installed flush with the street surface)</b>	Bern (Switzerland)	43	2018
	Poznan (Poland)	80	2018
	Gera (Germany)	225	2018
	Tampere (Finland)	5,000	2017
	Ratingen (Germany)	653	2017
	Dessau (Germany)	1,671	2017
	Bad Duerkheim (Germany)	30	2017
	Chemnitz (Germany)	2,910	2015-18
	Bergen (Norway)	619	2015
	Bochum (Germany)	205	2015
	Doha (Qatar)	16,959	2014-18
	Mainz (Germany)	744	2014-17
	Basel (Switzerland)	303	2014
	Birmingham (Great Britain)	427	2013-14
	Sosnowiec (Poland)	2,253	2013-14
	Champocologno (Switzerland)	113	2013
	Utrecht (The Netherlands)	5,256	2012-17
	Augsburg (Germany)	3,523	2012-14
	Heilbronn (Germany)	2,819	2012-13
	Radebeul (Germany)	1,663	2012
	Stuttgart (Germany), industrial tracks	97	2012
	Dublin (Ireland), industrial tracks	1,906	2011-13
	Pilsen (Czech Republic)	372	2011-12
	Prague (Czech Republic)	120	2011
	Samedan (Switzerland)	273	2011
	Tirano (Italy)	144	2011
Ruedersdorf/ Schoeneiche (Germany)	288	2010-13	
Woltersdorf (Germany)	922	2010-13	

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System	Project	Length [m]	Year
<b>RHEDA CITY (installed flush with the street surface; continuation)</b>	Runkel (Germany), industrial tracks	517	2010
	Schoeneiche (Germany)	105	2010
	Frankfurt (Germany)	2,408	2009-17
	Dublin (Ireland)	9,665	2009-17
	Arlesheim / Dornach (Switzerland)	150	2009
	Neuss (Germany)	60	2009
	Reinach (Switzerland)	615	2009
	Sevilla (Spain)	16,968	2009
	Leipzig (Germany)	6,702	2008-18
	Edinburgh (Great Britain)	8,454	2008-13
	Potsdam (Germany)	3,709	2008-17
	Wuerzburg (Germany)	135	2008-11
	Munich (Germany)	3,130	2008-09
	Warsaw (Poland)	33,230	2007-15
	Kassel (Germany)	881	2007-12
	Croydon (Great Britain)	142	2007-09
	Bonn (Germany)	328	2007-08
	Schwerin (Germany)	1,109	2006-17
	Bucharest (Rumania)	12,480	2006-07
	The Hague (The Netherlands)	2,335	2006-07
Chur (Switzerland)	1,700	2005-10	
Saarbruecken (Germany)	3,820	2005-07	
Heidelberg (Germany)	10,380	2004-18	
Magdeburg (Germany)	3,587	2004-13	
Nantes (France)	1,440	2004-05	
Karlsruhe (Germany)	10,093	2003-18	
Cologne (Germany)	5,290	2003-17	
Schriesheim (Germany)	371	2003-12	

**Ballastless track systems of RHEDA type for Urban transit**

System	Project	Length [m]	Year
<b>RHEDA CITY (installed flush with the street surface; continuation)</b>	Ludwigshafen (Germany)	3,455	2002-17
	Mannheim (Germany)	21,650	2002-18
	Nuremberg (Germany)	21,857	2002-18
	Aken (Germany), port track for inland port	610	2002-03
	Dusseldorf (Germany)	1,454	2002
	Essen (Germany)	235	2002
	Bremen (Germany)	910	2001
	Braunschweig (Germany)	3,404	2000-18
	Hanover (Germany)	5,424	1999-18
	Berlin (Germany)	71,974	1998-17
	Dresden (Germany)	71,073	1998-18
	<b>RHEDA CITY "Green"</b>	Amsterdam (The Netherlands)	835
Tampere (Finland)		3,500	2018
Stuttgart (Germany)		26	2017
Ratingen (Germany)		49	2017
Utrecht (The Netherlands)		2,930	2017
Nuremberg (Germany)		145	2016
Hanover (Germany)		959	2016-17
Heidelberg (Germany)		5,685	2016-18
Doha (Qatar)		1,076	2014-17
Frankfurt (Germany)		512	2014
Chemnitz (Germany)		153	2014-15
Warsaw (Poland)		10,107	2011-15
Edinburgh (Great Britain)		10,588	2009-14
Reinach (Schweizerland)		840	2009
Ludwigshafen (Germany)		536	2009
The Hague (The Netherlands)		1,135	2006-07
Mannheim (Germany)		13,516	2005-18



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System	Project	Length [m]	Year
<b>RHEDA CITY "Green" (continuation)</b>	Berlin (Germany)	41,838	2004-18
	Karlsruhe (Germany)	14,448	2003-18
	Cologne (Germany)	4,010	2001-02
<b>RHEDA MRT</b>	Seoul, Extension of the Metro line 3 (Korea)	2 x 3,000	2008-09
	Madrid, Metro Line 7, Station San Blas – Simancas (Spain)	190	2005
	Project underground transit system Circle Line CCL (Singapore)	20,000	2004-08
	Project Franz-Mett-Strasse in Berlin (Germany)	120	2002
	Project Underground Berlin / Line 2 (Germany)	195	2001
	Renewal of Track on the Berlin City Railways (Germany)	4 x 8,800	1996-97
<b>RHEDA RX</b>	Granada (Spain)	4,669	2013-14
	Berlin (Germany)	219	2013